

IN THE CLAIMS

1. (currently amended): An apparatus for decoding encoded voice data comprising:
a demodulator which demodulates said encoded voice data and which outputs a demodulated encoded voice data;
an adaptive differential pulse code modulation decoder which decodes said demodulated encoded voice data and which produces a pulse code modulation data;
an error detector which detects whether error is present in said encoded voice data and which outputs a detection result; and
a limiter which outputs ~~either said pulse code modulation data or a limit data~~ said pulse code modulation data when the pulse code modulation data is within a range from an upper limit data to a lower limit data, outputs the upper limit data when the pulse code modulation data is greater than the upper limit data, and outputs the lower limit data when the pulse code modulation data is lower than the lower limit data, in accordance with said detection result.

2. (currently amended): The apparatus for decoding encoded voice data according to claim 1, ~~wherein said limit data has an upper limit data and a lower limit data, and wherein said limiter comprises~~ further comprising:

a first comparator which compares said pulse code modulation data and said upper limit data and which outputs a first comparison result;

a second comparator which compares said pulse code modulation data and said lower limit data and which outputs a second comparison result; and

a first output portion which outputs said pulse code modulation data, said upper limit data or said lower limit data in accordance with said detection result and said first and second comparison results.

3. (currently amended): The apparatus for decoding encoded voice data according to claim 2, wherein said first output portion comprises:

a first logic circuit which outputs a first logic circuit result having a first voltage level when both a voltage level of said first comparison result and of said detection result are said first voltage level;

a second logic circuit which outputs a second logic circuit result having said first voltage level when both a voltage level of said second comparison result and of said detection result are said first voltage level; and

a first selector which selects said upper limit data when said first logic circuit result having said first voltage level is input, selects said lower limit data when said second logic circuit result having said first voltage level is input, or selects said pulse code modulation data when said first and second logic circuit results, each not having said first voltage level, is input.

4.-7. (canceled)

~~8. (currently amended): The apparatus for decoding encoded voice data according to claim 7, wherein said first~~

An apparatus for decoding encoded voice data comprising:

a demodulator which demodulates said encoded voice data and which outputs a demodulated encoded voice data:

an adaptive differential pulse code modulation decoder which decodes said demodulated encoded voice data and which produces a pulse code modulation data:

an error detector which detects whether an error is present in said encoded voice data and which outputs a detection result:

a threshold value setting portion which calculates a limit data based on said pulse code modulation data and which outputs said limit data, wherein the threshold value setting portion comprises:

an average calculating portion which calculates an average value of a numerical value data of said pulse code modulation data and which outputs said average value; [[and]]

a latch portion which latches said average value and which outputs said stored average value based on a voltage level of a control signal; and

a limiter which outputs either said pulse code modulation data or said limit data in accordance with said detection result.

9. (currently amended): The apparatus for decoding encoded voice data according to claim 8, wherein said average calculating portion comprises:

an accumulator which executes an addition of said numerical value data of said pulse code modulation data and a stored value, which replaces said stored value with an addition result, and which outputs said addition result; and

a multiple portion which executes a multiple operation of said addition result and a coefficient.

~~10. (currently amended): The apparatus for decoding encoded voice data according to claim 7, wherein said apparatus comprises:~~

An apparatus for decoding encoded voice data comprising:

a demodulator which demodulates said encoded voice data and which outputs a demodulated encoded voice data:

an adaptive differential pulse code modulation decoder which decodes said demodulated encoded voice data and which produces a pulse code modulation data:

an error detector which detects whether an error is present in said encoded voice data and which outputs a detection result;

a threshold value setting portion which calculates a limit data based on said pulse code modulation data and which outputs said limit data;

a counter which counts the number of times that said pulse code modulation data is over said limit data and which outputs a count result having a ~~first~~ voltage level when said count result is over a predetermined value; and

a limiter which outputs either said pulse code modulation data or said limit data in accordance with said detection result, and which outputs the selected data in accordance with said count result.

11. (currently amended): The apparatus for decoding encoded voice data according to claim 10, wherein said limit data has an upper limit data and a lower limit data; and wherein said limiter comprises:

a first comparator which compares said pulse code modulation data and said upper limit data and which outputs a first comparison result;

a second comparator which compares said pulse code modulation data and said lower limit value and which outputs a second comparison result; and

~~a fourth~~ an output portion which does not output ~~[[s]]~~ said pulse code modulation data when said count result is input having said ~~first~~ voltage level.

12. (currently amended): The apparatus for decoding encoded voice data according to claim 11, wherein said ~~fourth~~ output portion comprises:

a first logic circuit which outputs a first logic circuit result having ~~said~~ a first voltage level when both a voltage level of said first comparison result and of said detection result are said ~~first~~ voltage level;

a second logic circuit which outputs a second logic circuit result having said ~~first~~ voltage level when both a voltage level of said second comparison result and of said detection result are said ~~first~~ voltage level;

a first selector which selects said upper limit data when said first logic circuit result having said ~~first~~ voltage level is input, selects said lower limit data when said second logic circuit result having said ~~first~~ voltage level is input, or selects said pulse code modulation data when said first and second logic circuit results, each not having said ~~first~~ voltage level, is input; and

a controller which does not output said data output by said first selector when said count result is input having said ~~first~~ voltage level.

13. (currently amended): The apparatus for decoding encoded voice data according to claim 10, wherein a format of said limit data is the absolute value; and wherein said limiter portion comprises:

a ~~third~~ comparator which compares a numerical value data of said pulse code modulation data and said limit data and which outputs a ~~third~~ comparison result; and

~~a fifth~~ an output portion which does not output ~~[[s]]~~ said pulse code modulation data or said limit data when said count result is input having said ~~first~~ voltage level.

14. (currently amended): The apparatus for decoding encoded voice data according to claim 13, wherein said ~~fifth~~ output portion comprises:

a ~~third~~ logic circuit which outputs a ~~third~~ logic circuit result having said ~~first~~ voltage level when both a voltage level of said ~~third~~ comparison result and of said detection result are said ~~first~~ voltage level;

a ~~second~~ selector which selects said limit data when said ~~third~~ logic circuit result having said ~~first~~ voltage level is input or said numerical value data when said ~~third~~ logic circuit result having said ~~first~~ voltage level is not input;

a ~~first~~ combiner which combines a code data of said pulse code modulation data and said data selected by said ~~second~~ selector and which outputs a combined data; and

a controller which does not output said combined data output by said ~~first~~ combiner when said count result is input having said ~~first~~ voltage level.

15. (currently amended): The apparatus for decoding encoded voice data according to claim 13, wherein said ~~fifth~~ output portion comprises:

a ~~third~~ logic circuit which outputs a ~~third~~ logic circuit result having said ~~first~~ voltage level when both a voltage level of said ~~third~~ comparison result and of said detection result are said ~~first~~ voltage level;

a ~~second~~ combiner which combines a code data of said pulse code modulation data and said limit data and which outputs a combined limit data; and

a ~~third~~ selector which does not select said combined limit data and said pulse code modulation when said count result is input having said ~~first~~ voltage level.

16. (canceled)

~~17. (currently amended): The apparatus for decoding encoded voice data according to claim 16;~~

An apparatus for decoding encoded voice data comprising:

a demodulator which demodulates said encoded voice data and which outputs a demodulated encoded voice data;

an adaptive differential pulse code modulation decoder which decodes said demodulated encoded voice data and which produces pulse code modulation data;

an error detector which detects whether error is present in said encoded voice data and which outputs a detection result;

a threshold value setting portion which calculates limit data based on said pulse code modulation data produced at a term and which outputs said limit data, wherein said term is a term that a transmission error is not present in said encoded voice signal, and wherein said second the threshold value setting portion comprises:

an average calculating portion which calculates an average value of a numerical value data of said pulse code modulation data and which outputs said average value; [[and]]

~~a third~~ an output portion which stores said average value based on the voltage levels of a control signal and said detection result and which outputs a stored average value as said limit data; and

a limiter which outputs either said pulse code modulation data or said limit data in accordance with said detection result.

18. (currently amended): The apparatus for decoding encoded voice data according to claim 17, wherein said ~~third~~ output portion comprises:

a ~~fourth~~ logic circuit which outputs a ~~fourth~~ logic circuit result having [[said]] a first voltage level when a voltage level of said control signal is said first voltage level and when a voltage level of said detection result is a second voltage level; and

a ~~second~~ latch portion which stores said average value based on a voltage level of said ~~fourth~~ logic circuit result and which outputs a stored average value.

19. (new): The apparatus for decoding encoded voice data according to claim 1, wherein the upper limit value is a largest amplitude value of a voice signal at which the reproduced voice signal does not have noise, and the lower limit value is the smallest amplitude value of a voice signal at which the reproduced voice signal does not have noise.

20. (new): The apparatus for decoding encoded voice data according to claim 1, wherein the upper limit value and the lower limit value are set individually and freely.